

NAME # HANIFULLAH

Program # B.S Radiology

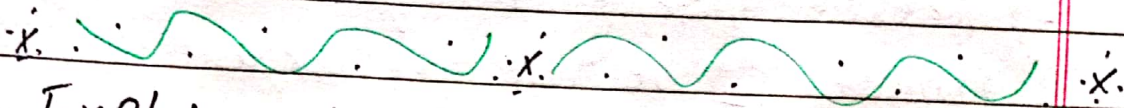
ID # 14095

Semester # 6th

Subject # Therapeutic Radiology

Date # 20/04/2020

Teacher Name # Mam A Toofa Azmat



Q1:- Explain when a Patients will be needed radiation Therapy?

Ans:- Radiation Therapy uses high-energy radiation to Kill cancer cells.

→ Types of radiation used for cancer treatment. such x-rays, gamma rays, nuclear medicine etc.

→ Type of radiation Therapy some time during the course of their treatment.

→ Radiation Therapy is some time used is treatment. such is surgery, chemotherapy etc.

→ Radiation Therapy represented by RT.

→ Radiation Therapy ~~diagnosis~~ some time

(2)

MOTOWOTOFOS

H/WO-C/WO

Date:...../...../20.....

used diagnosis such as CT scan, MRI, PET scan, ultrasound scans, nuclear medicine etc.

→ Radiation oncologist develops treatment plan.

→ Staff working such as radiation oncologist, physicists, dosimetrists.

→ Radiation therapy damage normal tissues. e.g reproductive organs.

→ Radiation therapy prescribed by a radiation oncologist depends on more factors, involved. such as types, size, location, travel, medical history, treatment, patient age of cancer.

→ Types of Radiation Therapy

→ Two way.

① Externally beam Radiation Therapy.

② Internal beam Radiation Therapy

① External beam Radiation Therapy
~~Some~~ Some times linear accelerator.

② Internal beam Radiation Therapy some time called brachytherapy

important

(D.T.O)

Side Effect of Radiation Therapy:-

- ① Fatigue
- ② Anorexia
- ③ Nausea and Vomiting
- ④ Skin changes such as itching, peeling, dryness, blistering, skin cancer etc.
- ⑤ Hair loss in treatment area
- ⑥ Diarrhea
- ⑦ Trouble Swallowing
- ⑧ Swelling
- ⑨ Sterility
- ⑩ joint Stiffness
- ⑪ Muscles aches
- ⑫ Delayed wound Healing
- ⑬ Skin rashes
- ⑭ depression
- ⑮ Changes skin colour



Q2:- write a short note on the following?

- (a) Image-guided radiation Therapy (IGRT)
- (b) Tomography Tomotherapy
- (c) Intensity modulated Radiation Therapy

(4)
(IMRT)

(D) Stereotactic Radiosurgery

(E) Proton Therapy

(a) Image-guided radiation Therapy

(IGRT) :-

(1) Two and three-dimensional imaging during

(2) the course of radiation treatment.

(2) (IGRT) uses scan and x-rays.

(3) IGRT is a type of cancer treatment that uses imaging technologies such as PET, and CT, MRI etc.

(4) In IGRT, repeated imaging scans are developed during the treatment.

(5) imaging scans are used to identify the tumor size, location, type, area, treatment etc.

(6) It is also called IGRT.

(7) It is repeated imaging can increase the accuracy of radiation treatment.

(8) The decreasing the total radiation dose to normal tissues.

(B) Tomotherapy :-

- ① 3-dimensional image of the tumor is taken.
- ② It is radiation therapy modality.
- ③ Three components modality. ① collimator
- ② multileaf collimator ③ couch
- ④ It is a type of image-guided IMRT.
- ⑤ Tomotherapy machine that develop radiation for imaging and treatment.
- ⑥ Tomotherapy machines can taken CT images of the patient's tumor.
- ⑦ Clinical uses compared 3D-CRT with ~~radio~~ tomotherapy.

(C) Intensity Modulated Radiation Therapy (IMRT)

- ① It is also called IMRT.
- ② It is uses hundred of tiny radiation beam-shape devices. ① collimators ② stationary
- ③ IMRT is advanced modality.
- ④ The tissues to receive different doses of radiation.
- ⑤ IMRT also called inverse treatment planning.
- ⑥ inverse treatment planning, radiation oncologist

(6)

chooses the radiation dose to different areas of the tumor.

(7) The goal of IMRT to increase the radiation dose to the areas.

(8) The reduce radiation exposure to specific sensitive area of surrounding normal tissue.

(9) Side effects:-
→ damage salivary glands
→ cause dry mouth.
→ xerostomia

(10) Stereotactic radiosurgery:-

(1) It is also called SRS.

(2) It is a non-surgical radiation therapy.

(3) It is also called CyberKnife.

(4) It is used to treat the abnormalities.

(5) SRS treat the tumors.

(6) It is ~~used~~ used for treat the brain and spinal cord.

(7) SRS uses image-guided tumor target.

(8) SRS can one or more high doses of radiation ~~used~~ used for small tumor.

Important

- (9) SRS used to treat small tumors.
- (10) SRS used the whole-brain radiation therapy.
- (11) EBRT can used isolated tumors.

(E) Proton Therapy:-

- ① Protons are charged particle.
 - ② It is also called proton beam therapy.
 - ③ It is used for treat cancer.
 - ④ It is denoted by PT.
 - ⑤ High energy proton damage cancer cells.
- (6) Proton Therapy uses for treatment:-
- Head and Neck.
 - Brain
 - Lung cancer
 - prostate gland
 - Pediatric cancer.

Q3:- what are the potential side effects of radiation therapy?

Ans:- Potential side effects of radiation therapy:-

- ① → Radiation Therapy can cause both acute and chronic side effect.
- ② Acute side effects during the treatment.
- ③ Chronic side effect occur months.
- ④ side effects develop depend on the area.
- ⑤ Acute radiation side effect caused by destroyed to normal cells in the area being treated.
- ⑥ Examples ~~include~~ include destroyed salivary gland, Hair loss, urinary Problem.
- ⑦ Most acute effect disappear after treatment ends like salivary gland damage.
- ⑧ The drug amifostine can help protect the salivary gland from radiation damage given during treatment.
- ⑨ Amifostine drug protect normal tissues from radiation during the treatment.
- ⑩ The drug is called radioprotectors.
- ⑪ other potential radioprotectors are tested in clinical trials.
- ⑫ Fatigue is a common side effect of radiation Therapy such as Nausea and vomiting.

important

(9)

- (13) Nausea and vomiting is common treated the abdomen.
- (14) Medications are available to treat the Nausea and Vomiting.
- (15) Fibrosis the replace of Normal tissues.
- (16) Damage to the bowel causes diarrhea and bleeding.
- (17) Memory loss
- (18) Infertility
- (19) breast cancer
- (20) ~~Over~~ Thyroid gland
- (21) Sexual Problem
- (22) Chemotherapy drug, genetic risk factors given below.
 - > life style.
 - > Smoking
 - > obesity
 - > Genetic Problem

For example :-

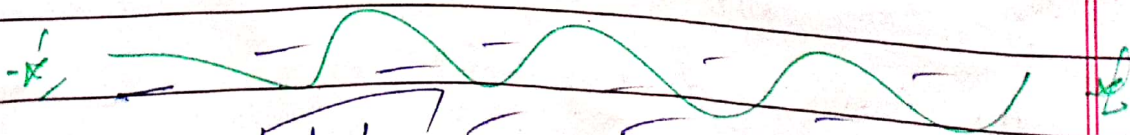
Acute side effects

- (1) Nausea and Vomiting
- (2) Throat sores
- (3) Diarrhea

- ④ Infertility
- ⑤ Hairloss
- ⑥ Skin colour changes
- ⑦ Skin rash
- ⑧ xthyma
- ⑨ SOB
- ⑩ Intestinal discomfort

Late side effects:-

- ① Dryness
- ② Skin cancer
- ③ Epilation
- ④ swelling
- ⑤ DNA damage
- ⑥ Heart diseases
- ⑦ Reproductive system
- ⑧ Radiation Therapy accidents.
- ⑨ Infertility
- ⑩ Anemia
- ⑪ Congenital diseases



THE END

Important